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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,537	02/02/2001	Tohru Hirayama	2001_0105A	6305

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WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER

HUNG, YUBIN

ART UNIT

PAPER NUMBER

2625

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p align="center">09/773,537</p>	<p>Applicant(s)</p> <p align="center">HIRAYAMA ET AL.</p>	
	<p>Examiner</p> <p align="center">Yubin Hung</p>	<p>Art Unit</p> <p align="center">2625</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 8 and 10-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8 and 10-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date <u>10/15/04</u>.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____.</p> |
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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 15, 2004 has been entered.
2. Claims 6, 9, 13-22 have been canceled. Claims 1-5, 7, 8 and 10-12 are still pending.

Response to Arguments

3. Applicant's arguments (pp. 9-12) with respect to amended claims 1-5, 7, 8 and 10-12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-5, 7, 8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corrigan et al. (US 6,522,977), in view of Alman (US 4,479,718), Admitted Prior Art (Specification: P. 1, lines 9-25, hereinafter referred to as APA) and Nakagome et al (US 5,917,541).

6. Regarding claim 1, Corrigan et al. discloses:

- a colorimeter
[Fig. 1, numeral 10; Col. 6, lines 24-28, 46-48]
- a computer in which a plurality of paint blends, the color data corresponding to each of the paint blends of a plurality of full-color paints are entered and a color-matching calculation logic using the paint blends and the data operates
[Col. 7, line 24 - Col. 8, line 8 (Computer); Col. 8, lines 23-33 (paint blends); Col. 8, lines 45-48 (color data); Fig. 1, the diamond-shaped block and the Paint Data Matching Process section starting at Col. 8, line 60 (color-matching calculation logic).]

Corrigan does not expressly disclose

- also enter color characteristic data and micro-brilliance-feeling data
- a micro-brilliance-feeling measuring device comprising
 - a light irradiation device operable to irradiate light to a paint film surface
 - a CCD camera operable to photograph the light-irradiated paint film surface
 - an image analyzer operable to analyze an image photographed by the CCD camera

Art Unit: 2625

- wherein the image photographed by the CCD camera is a two-dimensional image which is divided into a plurality of partitions
- wherein the micro-brilliance-feeling measuring device measures a brightness of each of the plurality of partitions
 - wherein the brightness is a digital gradation showing a shading value of the two-dimensional image photographed by the CCD camera for each partition
- wherein the image analyzer separately and quantitatively evaluates a glitter feeling and a particle feeling of the two-dimensional image photographed by the CCD camera, wherein the glitter feeling is a perception of an irregular minute brilliance produced by light regularly reflected from a brilliant pigment in the paint film and wherein a particle feeling is an irregular non-oriented pattern caused by an orientation or an overlap of a brilliant pigment in the paint film containing a brilliant material when observing a sample under a lighting condition in which a brilliance feeling does not easily occur

However, Alman teaches measuring micro-brilliance-feeling data [Fig. 1; Table on Col. 4, lines 12-23], using a device for characterizing a surface containing metallic paint (i.e., a micro-brilliance-feeling measuring device) that comprises a light irradiation device and a detector [Abstract; Fig. 2; Col. 2, lines 21-33; Col. 6, lines 22-35]. In addition, Admitted Prior Art teaches the calculation and use of color characteristic data. [Specifically, the K-values and the S-values recited in Col. 1, lines 15-16].

In addition, Nakagome et al. teaches/suggests using a solid state (e.g., CCD) camera as a detector to capture 2-D images and measure brightness [Fig. 2, numerals 21, 32, 33. Note that the 2-D FFT part of numeral 33 implies that the captured images are 2-D and it is well known in the art that a digital image consists of plural partitions (i.e., pixels, per P. 9, line 6-9 of the specifications). Further note that the light part of 33 and 34 imply brightness measurement and that it is well known in the art that brightness is represented as a digital gradation, e.g., an integer between 0 and 255]; using an

analyzer [Fig. 2, numeral 3] to analyze the image; and that the analyzer separately and quantitatively evaluates a glitter feeling [Fig. 2, numerals 32, 33, 43: the hue/sat/light parts] and particle feeling [Fig. 2, numeral 33: 2D-FFT part. Note that per P.13, lines 10-19, the Fourier transform of an image provides information about particle feeling]. (Note that the claim provides definitions for glitter feeling and particle feeling but not the specific procedures for measuring them. This examiner considers the components corresponding to the reference numerals of Fig. 2 recited above capable of providing reasonable evaluations of the feelings.)

Corrigan, Alman, APA and Nakagome are combinable because they have aspects that are from the field of endeavor of color measurement.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Corrigan et al. with the teachings of Alman, APA and Nakagome by using a CCD camera, an image signal processor and an image analyzer that separately and quantitatively evaluates a glitter feeling and a particle feeling; a micro-brilliance-feeling measuring device to measure micro-brilliance-feeling data, calculating characteristic data, entering the data to the computer and use them for color matching. The motivation would have been to be able to measure the feel or impression of the quality of human visual perception of color, gloss, texture and pattern of an object, as indicated by Nakagome in Col. 1, lines 13-24; furthermore, because the system of Corrigan et al. does process metallic paints and, as Alman points out, the

Art Unit: 2625

special property of such paints requires a different approach/device for properly characterization (Col.1, lines 25-64).

Therefore, it would have been obvious to combine Nakagome with Corrigan, Alman, and APA to obtain the invention as specified in claim 1.

7. Regarding claim 2, Corrigan et al. further discloses:

- color numbers corresponding to a plurality of paint blends entered in the computer (C) are entered in the computer
[Col. 8, lines 34-52. Note that VIN serves as the color number.]

8. Regarding claim 10, Corrigan et al. further teaches:

- wherein a colorimeter (A) is a multi-angle colorimeter
[Col. 6, lines 27-28.]

Note that while Corrigan et al. has not expressly disclosed the use of a multi-angle colorimeter, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use one since it was readily available (e.g., the device of US 5,387,977 to Berg et al.) and would be much easier to use and produce more consistent results.

9. Claim 3 is similarly analyzed and rejected as claim 10.

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10. Regarding claim 4, the combined invention of Corrigan, Alman, APA and Nakagome teaches/suggests the computer color-matching apparatus that the recited method uses, per the analysis of claim 1.

Regarding the remaining limitations, Corrigan further discloses

- a step of measuring a paint film of a reference color to which the color of a paint should be adjusted through color-matching by a colorimeter to obtain color data of the reference color
[Fig. 1, numeral 10; Col. 6, lines 25-27]
- a step of comparing the color data of the reference color with color data corresponding to paint blends previously entered in a computer, indexing the degree of matching of the color of the entered paint blends, and selecting a prospective paint blend
[Claim 1, lines 12-18. Note that indexing is inherent in any comparison/selection step.]

While Corrigan et al. does not expressly teach an additional step of measuring the paint film of a reference color by a micro-brilliance-feeling measuring device to obtain micro-brilliance-feeling data of the reference color for use in the comparison step, Alman teaches measuring color data of a surface containing metallic paint [Fig. 1; Table on Col. 4, lines 12-23] by a (micro-brilliance-feeling) measuring device [Abstract; Fig. 2; Col. 2, lines 21-33].

Since Corrigan et al. considers metallic paint (a kind of brilliant paint) in Col. 8, lines 29-33, it therefore would have been obvious to one of ordinary skill at the time the invention was made to modify Corrigan by also measuring a paint film of reference color and use the result in the comparison step in order to improve the matching result of the metallic

Art Unit: 2625

colors because measurements using only regular colorimeter cannot capture the special characteristics of metallic paints and will result in inferior color reproduction.

11. Regarding claim 5, Corrigan et al. further discloses

- executing (4) a step of correcting a selected paint blend by a color-matching-calculation logic after the step (3) to obtain a corrected blend closer to a reference color
[See claim 3 of Corrigan]

12. Regarding claim 11, Corrigan et al. further discloses

- wherein the prospective paint blend obtained in step (3) or the corrected blend obtained in step (4) is transferred to an electronic balance
[Fig. 1, numerals 16, 20,22; Col. 5, lines 37-45; Col. 6, lines 15-16. Note that it is well known in the art that an electronic balance is used for monitoring the amount of paint used.]

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13. Regarding claim 7, the combined invention of Corrigan, Alman, APA and

Nakagome teaches/suggests the computer color-matching apparatus that the recited method uses, per the analysis of claim 1.

Regarding the remaining limitations, steps 1-3 are identical to those of claim 4 except that step 3 includes the following additional limitation

- selecting color data and micro-brilliance feeling data of at least one paint blend having the same color number as the preset color number of the reference color

Art Unit: 2625

However, in Col. 8, line 61 – Col. 9, line 5 Corrigan further discloses the additional limitation. This is because Col. 8, line 61 – Col. 9 line 5 clearly indicates that each VIN (i.e., the color number) corresponds to a set of vehicles, which in turn is equivalent to a set of paint blend (since each vehicle has one).

14. Regarding claims 8 and 12, their parent (claim 7) has been analyzed and rejected above. Their remaining limitations are rejected basing on similar analyses for claims 5 and 11 above, respectively.

Contact Information

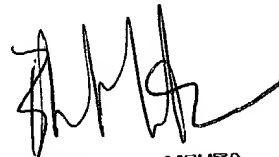
1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yubin Hung whose telephone number is (703) 305-1896. The examiner can normally be reached on 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2625

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Yubin Hung
Patent Examiner
December 22, 2004



BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600